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The Prevention of Tuberculosis:

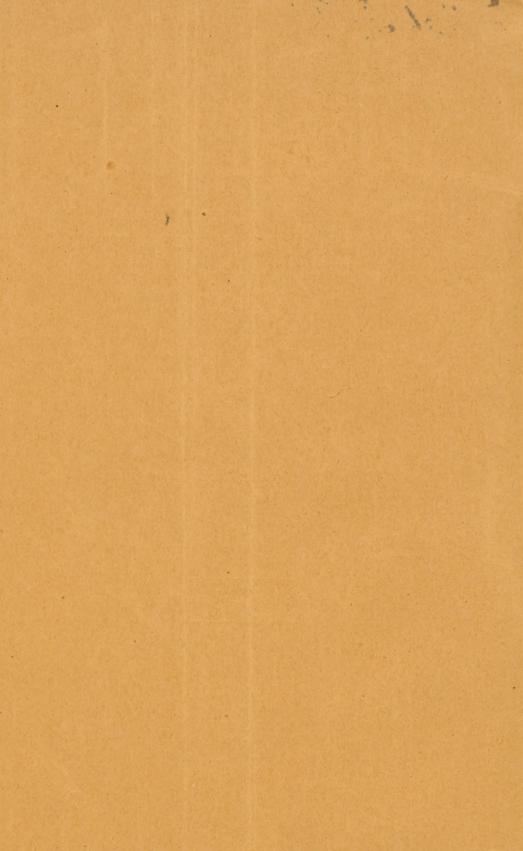
A CENTURY'S EXPERIENCE IN ITALY UNDER
THE INFLUENCE OF THE PREVENTIVE LAWS OF THE KINGDOM
OF NAPLES, ENACTED
IN 1782.

Read at the Meeting of the American Public Health Association, Charleston, S. C., December 16, 1890.

By LAWRENCE F. FLICK, M.D., of Philadelphia.

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THE PREVENTION OF TUBERCULOSIS: A CENTURY'S EXPERIENCE IN ITALY UNDER THE INFLUENCE OF THE PREVENTIVE LAWS OF THE KINGDOM OF NAPLES ENACTED IN 1782.

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By LAWRENCE F. FLICK, M.D., of Philadelphia.

ON July 19th, 1782, the sovereign of the kingdom of Naples gave his sanction to a legal enactment for the prevention of tuberculosis, which, according to De Renzi, the medical historian of Italy, contained the following propositions:

"I. That the physician shall report the consumptive patient, when ulceration of the lungs has been established, under penalty, for the first offence, of 300 ducats, and upon repeti-

tion, of banishment for ten years.

"2. That an inventory shall be made by the authorities of the clothing in the patient's room, to be identified after his death, and if any opposition shall be made, the person doing so, if he belongs to the lower class, shall have three years in the galleys or in prison; if to the nobility, three years in the castle and a penalty of 300 ducats.

"3. That household goods which are not susceptible shall be immediately cleansed, and those that are susceptible shall

at once be burned and destroyed.

"4. That the authorities themselves shall tear out and replaster the house, alter it from cellar to garret, carry away and burn the doors and wooden windows and put in new ones.



"5. That the sick poor shall at once be removed to a hospital.

"6. That newly built houses cannot be inhabited before one year from their completion, and six months after plaster-

ing has been finished and repairing has been done.

"7. That superintendents of hospitals must keep in separate places clothing and bedding for the use of consumptives. Other severe penalties are threatened to those who buy or sell objects which had been used by consumptives, to servants, members of the family, and to any transgressor whomsoever."

The kingdom of Naples, as it was then constituted, comprised all of the territory of the present kingdom of Italy, which constitutes the provinces of Abrozzo, Campania, Apulia, Basilicata and Calabria*—an area of about 11,291 square miles. Its population at that time was about 4,500,000,† and the population of the same territory at present is about 8,038,186.‡ Politically it formed one government with Sicily, and through its rulers was closely associated with Spain, continuing so until 1860, when all Italy was united under one government.§ The probabilities are, therefore, that the laws for the prevention of tuberculosis extended to the kingdom of Sicily as well as to that of Naples; and it is not at all unlikely that Spanish sentiment and Spanish influence had something to do with their enactment.

How strictly the law was enforced it is now difficult to learn, but the probabilities are that it was well received and scrupulously carried out by the people; for they were thoroughly convinced of the contagiousness of tuberculosis and recognized the necessity of some practical measures for its prevention, even before the law was enacted. De Renzi says that many hardships resulted from its enforcement, because of the interference with the renting of property, inasmuch as the people would not go into a house which was known to have been infected. If find no reference anywhere to imposition of penalties, and I am inclined to believe that the law was more strictly

^{*} Annales d'Hygiene Publique et de Medicine legale, tome 16, p. 302.

⁺ Supra cito, p. 300.

[‡] Statistica dell Cause delle Morte, etc., 1887, p. xii.

[§] Cyclopædia Americana, vol. xv., pp. 19-21.

Storia della Medicina in Italia, Salvatore De Renzi, vol. v., pp. 511-14.

enforced by the demands of the people than by the execution of the authorities. Efforts were soon made to have the law repealed, but it seems to have been allowed to remain on the statute books until the termination of the government, in 1860. The medical profession was at first almost unanimous in its adherence to the theory of contagion and in its support of the law, but as time rolled on it became nearly as unanimous in its disbelief in contagion, and its opposition to practical measures for the prevention of the disease.* The masses, however, clung tenaciously,† and to this day cling to the belief that the disease is contagious, and have never given up entirely the preventive practices which they acquired during the operation of the law.‡

Whether any laws for the prevention of tuberculosis were ever enacted in any other part of Italy I have been unable to ascertain. About the time that the laws of the kingdom of Naples were being enacted quite a spirited controversy was carried on between some of the most learned medical men of the kingdom of Naples and some of the Solons in medicine of the northern part of Italy, in which the latter opposed the theory of the contagiousness of tuberculosis and the enactment of laws for its prevention, and the former defended them.§ But whether any such laws were passed or not, the people of the northern part of Italy largely held the same ideas about the contagiousness of tuberculosis as their southern neighbors, and undoubtedly instituted preventive measures against the disease, which they continue to practise to this day.

The preventive measures inaugurated under the laws of the kingdom of Naples were based entirely upon empiricism, and for that reason were crude, harsh, and inefficient. It was known that tuberculosis was contagious, but it was not known wherein lay the medium of contagion. It was believed that the breath and the odor given off from the body of the consumptive were infectious, and that consequently it was not only dangerous to be near those affected with the disease, but

^{*} Storia della Medicina in Italia, Salvatore De Renzi, vol. v., pp. 511-14.
† Briefe uber Italien, 1793, bei Wilhelm Xaverius Jansen, pp. 250-51.

[‡] Histoire de la Contagion de la Phthisie Pulmonaire, par M. E. Boisseau, p. 376.

[§] Storia della Medic., etc., vol. v., pp. 511-14.

that anything which had been near them was infectious. The fact that the contagion is confined to the sputa and tubercular pus was not known, and thus the only real sources of danger were in a measure overlooked. With the abstract idea that tuberculosis is contagious as the basis, the most heroic and sweeping preventive measures were haphazardly constructed, many of which could have but little influence in preventing the spread of the disease. The burning of the clothing and furniture used by a consumptive patient, and the cleansing of the house which had been occupied by him from cellar to garret after his death, would afford some protection against the disease; but the patient during his lifetime was allowed to be a constant source of danger to his relatives, friends, and neighbors through the dissemination of sputa and tubercular pus. The only real efficacious measure practised was isolation. Nevertheless, in spite of the oppressive superfluous practices instigated and fostered by the law, and its general defectiveness as a sanitary measure against the disease which it was intended to restrict, it contained some merit, and to some extent fulfilled the object for which it was enacted. Inasmuch, moreover, as the practices which it inaugurated, even though defective, have been pretty well carried out by the people for more than a century, and some restrictive influence upon a disease must necessarily follow a general promulgation of the doctrine of its contagiousness, if it is contagious, it is but fair to accept the result of the operation of this law as a test of the practicability of preventing tuberculosis, and as an argument for or against the theory of its contagiousness. A comparison of the prevalence of the disease in 1782 with its prevalence at the present time will show the practical results of the law.

I have unfortunately not been able to find any mortality statistics for Italy as far back as 1782, and it is not probable that any are in existence.* A good idea of the amount of tuberculosis in the kingdom of Naples and in all Italy can be obtained, however, from contemporary writers, native and foreign. Michele Sarcone, in recounting the diseases which occurred in the kingdom of Naples during the autumn of 1764,

^{*} Briese uber Italien, 1793, bei Wilhelm Xaverius Jansen, pp. 250-51.

ends up by saying: "Consumptives suffered in the largest number, and as for these miserable creatures, they do not easily give up."* Among the most frequent and fatal diseases which occurred that year, he puts down peripneumonia, pleurisy, diarrhœa, and rheumatism. From his description it looks as though many of these cases were acute malignant tuberculosis. The peripneumonias and pleurisies were often so much alike that many took them as the same disease.† In an autopsy of a soldier who died of peripneumonia, he found that "the lungs were adherent at the back to the pleura with such strong adhesions that it was necessary to tear the parts to divide them. The right lobe was extremely swollen, hard, and covered with a yellow, sticky material; the inside was saturated with black curdled blood; the bronchial substance was choked up with a dense glutinous material, yellow in places and ash-gray in others, and by a tenacious bloody scum. The left lobe, of a purple color, appeared less swollen than the right, and there was in the middle an obscure beginning of an abscess." The diarrhœas he describes as sometimes accompanied by most rapid emaciation, and the rheumatisms by ulceration. As being among not the least of the ills to which human flesh is heir he speaks of a skin disease, which he claims is unjustly called the disease of Naples, and which he says ordinarily terminates in fatal consumption. ‡ In his account of the terrible disease which visited Naples that year in the form of a plague, he tells us that it was always accompanied by either a remittent or a continued fever, with a disposition to the breaking down of tissue and the formation of pus, and often terminated in internal and external abscesses and tubercles.§ In those days tuberculosis was not recognized unless it took the form of a slow wasting disease.

One cannot fail to recognize, however, in Sarcone's descriptions tuberculosis of every form—acute miliary tuberculosis of the lungs and pleura, tubercular peritonitis, tubercular meningitis, tubercular arthritis, tubercular adenitis and lupus, all in

^{* &}quot;I tabidi soffrirono moltissimo e di questi miseri se ne perderono facilmente." Regionat de Mali, etc., Michele Sarcone. Part II., p. 658.

[†] Supra cito, Part I., pp. 166-67; pp. 67, 73, 102.

[†] Regionata de Mali, etc., Michele Sarcone, Parte Prima, pp. 58, 59. § Supra cito, Parte Seconda, p. 227 et sea.

the most malignant form. If many of the diseases so ably portraved by Sarcone, and which prevailed in his day to such a vast extent, were not tuberculosis, there is certainly no disease known to modern pathology with which his descriptions so well fit in. His appalling picture of the diseases of Naples is well sustained, and the suspicion that many of the acute forms were of a tuberculous character is entirely borne out by the writings of Dr. Benjamin Pugh, an English physician who visited Italy in 1783. Dr. Pugh says: "As this climate had been so long celebrated for its mildness, I was surprised at the obstinate continuance of the complaints of our own family, and likewise at the numbers of diseased and miserable objects I met in every part of the city. I resolved to visit the hospitals, where I beheld misery in the extreme, fevers of every class, but scarcely one where the lungs had not been primarily concerned: rheumatisms, dropsies, scrofulas, consumptions, ulcers of every kind, and venereal diseases without number. ... To what diseases, then, are the inhabitants of this country most subject? They are troubled with fevers of various kinds, in most or all of which I found the lungs concerned; scrofulas, rheumatisms, ophthalmias, scorbutic putrid gums with ulcers and eruptions of various sorts. The most prevailing distemper seemed to be a marasmus. I frequented their hospitals often, and found those to be the chief diseases; all which are familiar to those in the hospitals of Naples and other towns near the sea-coast in Italy. But if the inhabitants themselves, whose very looks betray marks of ill health, afforded not such numerous proofs of the unwholesomeness of this air, I am, alas! furnished with too many by my unhappy countrymen who wintered there in 1783. There were 24 families, besides several single English gentlemen, the whole of which amounted to 136 persons; and I believe very few of those who came there on account of the air found expected benefit. I can except only two: one an elderly gouty gentleman, the other a tender, weakly, low-spirited gentleman, with a slow fever at times: but both had sound lungs. The only consumptive cases which I saw at Nice were six young gentlemen and a lady rather advanced in years, all of whom died in the course of the winter. Three of these young men were so active and cheerful at times, even a day before their deaths, that

there was reason to hope for their recovery. Had they stayed in England, or some parts of the south of France, I firmly believe that four of the six, if not now alive, would at least have protracted their days. I attended a great many of the English, who came to Nice in health, in violent inflammatory fevers, in all of which the lungs were concerned."* Dr. Wilhelm Xaverius Jansen, a German physician, wrote from Italy, in 1703, bearing testimony to the same condition of things. "In the hospitals," he says, "I still found quite a number of chest diseases accompanied by inflammation, seldom, too, as this occurs with us at this time of year. Yet it is not always real inflammation. Mostly they are of a rheumatic character, and common people and soldiers, who expose themselves to wet and cold, are more frequently attacked than cleanly people. Besides these one finds different kinds of consumption; and these, as it appears, are either transmitted by the parents, or are conveyed by infection." +

The terrible prevalence of tuberculosis in the kingdom of Naples and all Italy, at the time when the Neopolitan laws were introduced for its restriction, is born testimony to, in possibly even stronger terms, by later writers than by contemporaries. De Renzi, the medical historian of Italy, who had access to all of the controversial writings of that day, says: "It has been asserted in this connection, and not through the instrumentality of the government, from which I do not take my information, that consumption had at that time become almost general, and that one could daily see death carry off many citizens and the destruction of numerous families because of the little precaution practised." J. B. Martinez, a Frenchman, wrote from Naples even as late as 1834: "I am free to say that consumption is not less frequent in this city than in Paris and London. I will add, moreover, that after having visited nearly all the important hospitals of France, Switzerland, England, Scotland, and Italy, I have nowhere seen fatal cases of phthisis in such large numbers as at Naples. It is true that the contagious nature which the Neapolitans ascribe to this unfortunate disease is the cause of always confining to the

^{*} Observations on the Climate of Naples, Rome, Nice, etc., by Benjamin Pugh, M.D., 1784, p. 7.

[†] Briefe uber Italien, 1793, bei Wilhelm Xaverius Jansen, p. 250-51.

same room the victims which it strikes down. But it is also true that the disease is much more frequent. Besides this observation agrees with those of Messrs. Pequin, Terrel, Clarke, Renzi, etc., and is the same as that of travellers, strangers to the healing art, who have written about Italy." In order to fully appreciate Martinez's statements as taken in connection with the contemporary writers I have quoted, one needs to further keep in mind the words of De Renzi, who, when comparing the prevalence of consumption in 1848 with that of 1782, said: "Which state of things ought to be a source of comfort to us now living, as we find it no longer almost general, although the precautions used are less."*

We are so accustomed to form our ideas of the prevalence of a disease upon the percentage of deaths to the number of living people that it may be well to try to make an estimate of the mortality rate from tuberculosis in the kingdom of Naples in 1782.† De Renzi tells us, in 1848, that tuberculosis was not near so prevalent then as it had been when the Neopolitan laws were made. Martinez tells us, in 1834, that consumption was much more prevalent in Naples than it was in Paris or London. The mortality rate from consumption in Londont and Pariss in 1834 ranged from 4 to 6 per 1000 living people. It is safe to conclude, therefore, that the mortality rate from consumption in Naples in 1834 could not well have been less than 4 per 1000 living people, and that it probably was more than 6 per 1000. And as De Renzi, who is most excellent authority, informs us that there had already been a great reduction, it will not be overstepping the mark to place the mortality rate from tuberculosis for the kingdom of Naples and for Italy in 1782 at 10 per 1000 living people. That this is, if anything out of the way, an underestimate is not only shown by the descriptions of contemporary writers, but by some hospital statistics which De Renzi gives for the year 1828. Out of 5285 admissions to one of the hospitals of the

^{*&}quot; La quel cosa deve riuscir di conforto per i presenti che non veggono quasi generale, comunque minora sieno le cantele che si usino." Storia della Medicina in Italia, De Renzi. Tome V., pp. 511-14.

[†] Storia della Medicina in Italia, Salvatore De Renzi. Tome V., pp. 511-14.

[‡] Registrar-General's Report, vol. i.

[§] Paris, Vaccher sur Mortalité en, 1865, p. 176.

city of Naples during the year 1828, 1108 were consumptives; and out of 1366 deaths which occurred in the same institution during that year, 600 were due to that disease.* Now, after making due allowance for the fact that the consumptive poor were being isolated in hospitals at this time, it must not be forgotten that these are the deaths and admissions to but a single hospital, and that Naples at that time had at least four large hospitals. If anything further is needed to complete the picture of the appalling prevalence of tuberculosis in Italy in 1782 it can be found in the reputation which that country bore throughout northern Europe at that time. Medical men of other countries began to advise their people to remain away from those sunny skies which canopied eternal spring, as they believed them to overhang a climate specially adapted to the production of consumption. Pugh wrote, "And to some or all of these causes do I attribute that unbalmy quality of the air of Naples, so peculiarly unfavorable to consumptive lungs." The danger attendant upon a prolonged visit to Italy and the fatality of the Italian climate to persons afflicted with consumption found forcible expression in the proverb, "Vedi Napoli e poi muori," + "See Naples and then die."

The mortality from tuberculosis in Italy now as compared with then is best shown by the official returns. In 1887 the mortality rate from consumption for all Italy was 1.29 per 1000 living people, and from tubercular affections, including, with phthisis, scrofula, tabes mesenterica, and tubercular meningitis, 1.95 per 1000. During the same year the mortality from consumption and general tuberculosis for the towns and cities of the territory which formerly constituted the kingdom of Naples was 1.16 per 1000 living people; and for the rest of Italy, for the same diseases and for like towns and cities, 2.20 per 1000.‡ The mortality rate for the city of Naples during the same year from consumption and general tuberculosis was 1.92 per 1000.

^{*} Topografia di Napoli, pp. 131-32.

[†] Briefe von Dr. Diruf, Deutsche Klinik, Berlin, vol. xiii., 1861.

[‡] The compiler of the mortality statistics of Italy tries to explain the discrepancy in the mortality returns from phthisis between the north and south of Italy upon the ground of substitution of nomenclature, as the deaths from bronchitis in the south of Italy are more numerous than in the north. This is not satisfactory, however, as the excess of deaths from bronchitis in the south over those in the north occurs in persons under 10 and over 50 years of age.

The mortality rate during the same year for other tubercular diseases, such as tubercular meningitis, scrofula, tabes mesenterica, and tubercular arthritis was, for the territory which formerly constituted the kingdom of Naples, .89 per 1000 living people; and for the rest of Italy .85 per 1000. The mortality rate from the same diseases for the city of Naples during the same year was 1.26 per 1000.*

It will thus be seen from the figures given that there has been a very large reduction in the mortality from tuberculosis in the entire kingdom of Italy, and that the reduction has been particularly marked in the territory which formerly constituted the kingdom of Naples. Italy has at present the lowest mortality rate from consumption of any country in Europet with possibly the exception of Spain; and that part of it which formerly constituted the kingdom of Naples is, in the country districts and small towns, practically free from the disease. Forty-five towns in this part of Italy, with an aggregate population of 742,068, had a mortality rate of .58 per 1000 from consumption and general tuberculosis during the year 1887. Ten selected towns, with an aggregate population of 146,924, had a mortality rate of .28 per 1000 from the same diseases during the same year. Four selected towns, with an aggregate population of 36,460, had a mortality rate of .19 per 1000.‡ It is fair to suppose that the country districts in this part of Italy have a still lower death-rate from these diseases.

Expressed in figures, the reduction in the mortality from tuberculosis in Italy since 1782 ranges from 50 per cent to 90 per cent. The much greater reduction in that part which formerly constituted the kingdom of Naples is no doubt due to the immediate influence of the Neopolitan law. This is all the more noteworthy, since at the time that the preventive measures were begun, the disease seemed to be more prevalent in Naples than in any other part of the country. To fully appreciate the magnitude and to understand the entire meaning of this reduction, it must further be borne in mind that Italy has again become, and has been for the last thirty years, a famous resort for consumptive invalids. That the

^{*} Statistica delle Cause delle Morti avvenute in tutti i Comuni del Regno nell'anno 1887.

[†] Supra cito. ‡ Statistica delle Cause delle Morti, etc., 1887.

presence of such visitors contributes to keeping up the disease in Italy is evident from the mortality returns of the towns and cities frequented by them. Pallanza, for example, had a death-rate from consumption and general tuberculosis in 1887 of 4.21 per 1000; Pisa, 3.25 per 1000; San Remo, 2.44 per 1000, and Spezzia, 2.35 per 1000.*

Now, what is the lesson to be learned from this vast reduction in the mortality from tuberculosis in Italy under the influence of the Neapolitan law? In the first place, it is a practical demonstration of the preventability of the disease; and secondly, it gives us some idea of what measures will bring about such a result. When side by side with the reduction in the mortality from tuberculosis in the kingdom of Naples under the operation of the Neapolitan law is placed the reduction which has taken place in England during the last forty years from the same disease, as the result of isolation in special hospitals, it can certainly no longer be said that the prevention of this disease is a mere theory. In England there has been a reduction of 50 per cent in the mortality from tuberculosis in forty years as the result of isolation of from three per cent to 18 per cent of all cases yearly. In the kingdom of Naples the disease has been nearly exterminated in one hundred years by a system of isolation and disinfection, or, rather, destruction of infected objects. Either of these facts, standing by themselves, might be looked upon as mere coincidences, but taken together they must be accepted as the exponents of a fixed law. They show that tuberculosis is not only a preventable disease, but that it can be prevented by simple, easy methods. Now that we have real scientific knowledge of the etiology of tuberculosis and know something of the biology of the organism which produces the disease, we can understand how the empirical practices in Italy and the single preventive measure in England can have produced such astonishing results. We observe the law that no new case of tuberculosis can arise without having an old one to spring from, proven by the placing of old cases where they cannot produce new ones.

^{*} Supra cito.

[†] Special Hospitals for the Treatment of Tuberculosis. L. F. Flick, Times and Register, March 15, 1890.

In the light of the history of tuberculosis in Italy and in England, is the sanitarian of the day fully cognizant of his power over this disease, and fully aroused to his duty in the matter of its prevention? If empirical methods could produce such results in Italy, and isolation on a comparatively small scale could produce such effects in England, what would be the result of well-regulated scientific methods for its prevention? It is my firm belief, after careful study of the question, that with our present knowledge of the etiology of the disease we have it in our power to completely wipe out the disease in a single generation. To do this would, of course, require well-organized boards of health, an enlightened public, and the co-operation of the entire medical profession. prevention of disease is always nobler than its cure. Were half the energy which is being spent in the almost hopeless task of searching for a specific cure for tuberculosis devoted to its extermination, its accomplishment would be guaranteed. Why is nothing practical being done? The entire medical profession seems to have accepted the theory of the contagiousness of tuberculosis. Are we afraid to follow this theory to where it leads? If the disease is contagious it can be prevented. If it can be prevented, why are there not already practical measures in operation for its restriction? With the object lessons of Italy and England before us we can no longer remain inactive consistently with our convictions.

Inasmuch as we now know that the contagion of tuberculosis is confined to the sputa and pus, preventive measures are much simplified, as the only necessity is to render those substances innocuous. How should this be done? At the present stage of public enlightenment on the subject, the one measure which will accomplish the most good with the least friction with preconceived ideas is the establishment of special hospitals for the treatment of the disease. The voluntary withdrawal of patients to such institutions would remove centres of infection from the family hearthstone and would spread the doctrine of prevention, as well as practically educate the public to its methods. I believe, moreover, that the time has come when we should go further. Tuberculosis should be placed on the list of diseases returnable to the Board of Health, so that a record may be kept of the whereabouts of every case,

and of its movements from house to house. From a careful topographical study of the disease in the Fifth Ward of the city of Philadelphia,* extending over a period of twenty-five years, I am convinced that fully one half of the cases of tuberculosis among the poor people have their origin directly or indirectly in infected houses. A family unsuspectingly moves into a house which has just been vacated by a family in which a death has occurred from tuberculosis. In the course of time the weakest member of this family succumbs to the disease, and a new series of victims is started. The public certainly owes a duty to the individual in this matter, and that duty can only be exercised through the Board of Health. By keeping track of every case of tuberculosis, by showing the family of the unfortunate victim how to protect themselves against the disease, and by disinfecting every house which has been occupied by a consumptive before a new occupant moves into it, our boards of health could make themselves a most potent factor in the restriction of this fearful destroyer of human life.

I am aware that a great cry is being raised in advance against any practical preventive measures against this disease upon the plea of humanity. Why further burden the life of the poor consumptive, they say, by removing him from his family and friends, and emphasizing his hopeless situation? Sincere as the feelings may be which give rise to this conservative protest, it is evident that they are not inspired by a thorough understanding of the subject, such as can only be obtained by a bedside study of the question. What can be more inhuman than consigning an intelligent human being, with a long, tedious, loathsome disease, to the care of those whom he loves, when that care implies deprivation and death to them, and despair to himself! The classical symptom of consumption is hope and unbounded faith in ultimate recovery, and oh! what ingenious cruelty to make the poor victim feel that no helping hand is extended him, and that his chances for recovery are curtailed by the poverty of those who love him! The preventive measures for the restriction of tuberculosis, as dictated by the science of to-day, are all in direct line with humanity, and the strongest arguments which can be ad-

^{*} Contagiousness of Phthisis. L. F. Flick, Transactions of Medical Society of State of Pennsylvania, 1888.

vanced for their adoption are born of the great command, "Love thy neighbor as thyself."

It is certainly humane to give the poor man who falls a victim to this disease a home in a hospital where he can receive all the aid of medical science for his recovery, and where he can feel that he is neither snatching from his dear ones the morsel of bread which is necessary for their sustenance, nor infecting them with the same horrible disease from the grasp of which he is trying to extricate himself. It is certainly humane to extend to the poor protection from a disease against which they have neither the knowledge nor means to protect themselves. Preventive measures against tuberculosis imply nothing more, and I trust this convention will not adjourn without taking some steps looking to concerted effort in this direction.

